

numerous granular casts appear. During the first attack of fever these changes remain quite constant. On the third afebrile day, more rarely on the second, there is a gradual decrease in the number of granular casts and in the amount of albumin. By the fourth day the urine is again normal. The urinary findings in the second febrile attack are in every way similar to those in the first, and the urine also clears up in the afebrile period in the same way. If a third and fourth attack occur the albuminuria usually returns, but the granular casts are generally much less abundant than in the first two attacks. The albuminuria, however, disappears early. It seems evident that there is a severe renal injury at the beginning of the disease, but as the infection continues, the kidneys seem to become more resistant to the harmful agent. Exceptional cases were noted where the urinary changes were in some instances less pronounced, in others more severe. In one instance, chronic nephritis remained.

Vaccine Therapy in Typhoid Fever.—In answer to inquiries from Prof. Paltauf, BIEDL and H. EGGRETH (*Wien. klin. Wchnschr.*, 1915, xxvii., 125) have given their experiences with the vaccine treatment of typhoid fever. Paltauf publishes their letters in full. Biedl has treated a series of 22 cases of severe typhoid fever in the beginning of the second week; the blood culture was positive in all of these. Of this number 2 are excluded. Both were men with high fever, status typhosus, and recurring epistaxis, the last nose-bleed occurring one day before injection in each case. Two hours after injection of the vaccine there occurred in each patient an uncontrollable hemorrhage from the nose which led to death. Of the remaining 20 cases, 11 received Vincent's vaccine (typhoid bacilli killed with ether), first 100,000,000, later 250,000,000 to 300,000,000 in 2 c.c. of salt solution, and 9 were treated with Besredka's vaccine intravenously (sensitized living typhoid bacilli) in doses of 250,000,000 to 300,000,000 in 2 c.c. of salt solution. The end result was as follows: Of the cases treated with Vincent's vaccine there were 3 who died; 2 received subcutaneous injection and died fourteen and eighteen days respectively after the injection; 1 treated intravenously, after an initial favorable response, died in the third week from severe bronchopneumonia and heart weakness. Evidently none of these deaths were due to the vaccine. The remaining 8 patients recovered. All of the patients treated with Besredka's vaccine recovered. Biedl's impressions were decidedly favorable. Following the intravenous injection there was a rise in temperature in one to two or three hours from 39° C. to 40° or 41° C., in one case even to 42° C., followed in twelve to eighteen hours by a critical fall of temperature to normal. No signs of collapse were observed; indeed, in two cases the injection was made when the patients were in a state of collapse with a pulse which could not be counted. Within three hours the temperature rose, the pulse became much fuller and 100 per minute. Following crisis the patients felt much better. The patients treated with Besredka's vaccine remained afebrile. Some of the other patients had slight evening elevations of temperature; in none above 38° C. Eggreth treated a series of 43 cases of typhoid fever with a single intravenous injection of 0.5 to 1.0 c.c. of Besredka's vaccine. Subcutaneous injections had produced no result. In 34

cases of Eggreth's series a critical fall of temperature followed within three to twelve hours after the injection, frequently with profuse sweating and marked relief of headache and delirium. Of these patients 31 remained afebrile; the remaining 3 developed fever after twelve, fourteen, and fifteen days, due respectively to endocarditis, to bilateral purulent parotitis, and to suppurative osteoperiostitis. The majority of the patients received the injection between the seventh and sixteenth day of the disease. In a group of 8 cases in the fourth and fifth week of the disease, suffering with broncho- or pleuro-pneumonia, the injection was ineffective. The forty-third case died three hours after the injection. An autopsy was performed which revealed typical typhoid lesions in the small intestine, pneumonia, and myocarditis. The patient had been brought to the hospital unconscious and desperately ill, and a poor risk. Paltauf utters a word of warning, as he has heard of a few instances of collapse following the intravenous use of Besredka's vaccine.

The Bacteriology of Appendicitis.—ROSENOW (*Jour. Infect. Dis.*, 1915, xvi, 240) reports the results of his observations and experiments, which seem to indicate that appendicitis, in the absence of foreign bodies, is very frequently of a hemogenous origin and secondary to some distant focus of infection. The organisms most commonly found in the distant foci are streptococci, and the disease develops when, for some reason or other, the organisms have acquired an affinity for the appendix and at the same time gain entrance into the circulation. These findings further bear out the author's theory that a focus of infection is to be regarded not merely as the place of entrance of bacteria, but also as the place where they may acquire the power necessary to infect distant organs and tissues. The importance is emphasized, therefore, of a thorough search for and removal of possible foci of infection, from which appendicitis may originate, and that this may occur in clinical experience is indicated by the not infrequent occurrence of the disease, at times almost in an epidemic form, when throat infections are particularly prevalent.

The Factors of Coagulation in Pernicious Anemia.—DRINKER and HURWITZ (*Arch. Int. Med.*, 1915, xv, 733) have studied the various factors in a series of cases, including seven of pernicious anemia. They emphasize again the essential characteristics of this disease and especially those cases which are distinguished chiefly by failure to regenerate blood cells and by a tendency to bleed. In a typical case reported in full, they were able to note that the coagulation time was distinctly prolonged once only; that the bleeding time was always long, and that the platelets were always far below normal, nor were they consistently increased by transfusion. Antithrombin was consistently normal, as was fibrinogen, and neither was affected by transfusion, though this procedure tended to cause a slight transient rise in pro-thrombin, which was otherwise constantly decreased. This diminution in pro-thrombin is not great and is probably unimportant, provided active regeneration is in progress. The other normal findings occurred even in the presence of extremely low cell counts.